CLAIMS

What is claimed is:

1.   A flexible variable rate vocoder comprising a rate determination module which selects a target average data rate from a continuous or pseudo-continuous range

5   of possible target rates responsive to at least network parameter and at least one external parameter, and a rate implementation module which sets the rate of outgoing frames so that the actual rate averaged over a predetermined time period is approximately equal to the target average data rate.

2.   The vocoder of claim 1 wherein the rate implementation module is configured

10   to adjust the relative percentages of outgoing frames which are full rate, half rate, quarter rate, and eighth rate frames such that the average actual rate is approximately equal to the target average rate.

3.   The vocoder of claim 1 wherein the network parameter is available network capacity, and the external parameter is an indicator of the class of service desired or

15   purchased by a user.

4.   The vocoder of claim 1 wherein the available classes of service comprise premium, standard, and economy.

5.   The vocoder of claim 4 in a wireless communication network wherein, when a demand for network services is received, if the network cannot accommodate the

20   demand at the desired quality, the network will reduce the ADR of all non-premium users until the network can accommodate the demand at the desired quality.

6.   The vocoder of claim 4 in a wireless communication network wherein, when a demand for network services is received, if the network can easily accommodate the demand at the desired quality, the network will do so and then even increase the ADR

25   of all users until the network is close to saturation.

7.   The vocoder of claim 2 wherein the rate implementation module comprises a switch, a full rate module, a half rate module, a quarter rate module, an eighth rate module, and a multiplexor, wherein the switch switches amongst the modules, and the multiplexor receives the frames from each of the modules, and serially outputs them

30   on a signal line.

8.   The vocoder of claim 1 wherein the network parameter is available capacity, and the external parameter is an indicator of the subject matter of the information sought to be transmitted.

9.   The vocoder of claim 8 wherein the available classes of subject matter which can be transmitted comprise voice, data, music, image or video.

10.   The vocoder of claim 9 in a wireless communication network wherein, when a demand for network services is received, if the network cannot accommodate the additional demand at the desired quality, it will reduce the ADR for selected categories of subject matter, until the network can accommodate the demand at the desired quality.

11.   The vocoder of claim 9 in a wireless communication network wherein, when a demand for network services is received, if the network can easily accommodate the desired demand, it will do so, and then increase the ADR for selected categories of subject matter until the network is within a target amount of saturation.

12.   The vocoder of claim 1 wherein the external parameter is the time of day.

13.   The vocoder of claim 1 wherein the external parameter is the weather.

14.   The vocoder of claim 1 in a transceiver, transmitter, or receiver.

15.   The transceiver, transmitter, or receiver of claim 1 in a wireless device.

16.   The wireless device of claim 15 which is a mobile wireless device.

17.   The wireless device of claim 15 which is an immobile wireless device.

18.   The mobile wireless device of claim 16 which is a handset.

19.   A method of responding to a demand for network services comprising the following steps:

when a demand for network services is initiated, the demand including a desired level of quality or category of subject matter sought to be communicated, querying whether the network can accommodate the demand at the desired level of quality;
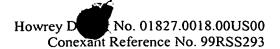
if not, selectively decreasing the ADRs of users until the demand can be accommodated at the desired quality of service; and

if so, accommodating the demand at the desired level of quality.

20. The method of claim 19 further comprising, if the network can accommodate the demand at the desired level of quality, selectively increasing the ADRs of users until the network is within a predetermined amount of saturation.

21. The method of claim 19 wherein the desired classes of service comprise premium, standard, and economy classes of service, and the selectively decreasing step comprises decreasing the ADRs of selected classes of users until the demand can be accommodated at the desired level of quality.

22. The method of claim 19 wherein the classes of subject matter comprise voice, data, music, image, and video, and the selectively decreasing step comprises selectively decreasing the ADRs of selected classes of subject matter until the demand can be accommodated at the desired level of quality.

23. The method of claim 21 wherein the selected classes of users comprise non-premium users.

24. The method of claim 20 wherein the selectively increasing step comprises increasing the ADRs of all users.

25. The method of claim 20 wherein the selectively increasing step comprises increasing the ADRs of selected classes of users.

26. The method of claim 20 wherein the selectively increasing step comprises increasing the ADRs of selected categories of subject matter.

27. A flexible variable rate vocoder comprising a rate determination module which selects a target average data rate from a continuous or pseudo-continuous range of possible target rates responsive to at least network parameter or at least one external parameter, and a rate implementation module which sets the rate of outgoing frames so that the actual rate averaged over a predetermined time period is approximately equal to the target average data rate.